

## OVARIOTOMY.<sup>1</sup>

BY JAMES R. CHADWICK, M. D.,

*Lecturer on Diseases of Women, Harvard Medical School.*

I. Mrs. M. was recommended to me by Drs. Inman and Milliken, of Cherryfield, Me. The patient is forty-six years old, was married one year ago, has never been pregnant; menstruation, irregular for four years, last occurred in September, 1874. The size of her abdomen has been gradually increasing for two years; this increase was recognized eighteen months ago as due to the presence of a tumor. Of late there has been much suffering from back-ache, and especially from pain in the left side of the abdomen. The bowels have been constipated.

Four brothers have died of phthisis, as have many cousins. The patient has been an invalid all her life. When fourteen years old she fell and injured her spine.

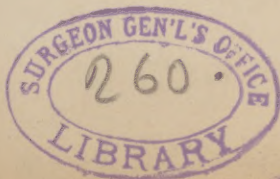
The girth at the umbilicus is forty-one and three fourths inches. On percussion there is flatness throughout the abdomen, except in the right lumbar region, where there is tympanitic resonance. Fluctuation is uninterrupted in all directions. The abdomen is symmetrically distended. The abdominal walls, although tense, are freely movable over the tumor. The uterus is retroverted, and quite movable independently of the tumor. The latter does not extend into the small pelvis, and can with difficulty be reached per vaginam. Fluctuation bimanually is uninterrupted. There is slight undue prominence of several dorsal vertebræ.

*Diagnosis.* — Unilocular ovarian cyst, with no solid part and no adhesions. This was corroborated on the next day by Dr. G. H. Lyman.

*Prognosis.* — Four chances of recovery out of five.

*Precautions against infection* were very many and minute: A house in Somerville surrounded by a garden; a large sunny room never previously occupied by a sick person; a new top mattress; an open fire; a trustworthy nurse who had been disengaged for five weeks, in a freshly-washed dress; no spectator admitted who had attended any infectious disease, suppurating wound, or autopsy for the week previous; Dr.

<sup>1</sup> Read before the Suffolk District Medical Society, January 30, 1875.



Lyman, on whom I relied as an assistant, was not accepted, owing to an inflamed matrix on one finger; new sponges; all instruments boiled, and subsequently washed in a solution of permanganate of potash; hands of operator and of assistants washed in the same solution. I abstained from visiting any but perfectly innocuous patients for two weeks before operating.

*Operation* on January 16, 1875, with the assistance of Drs. J. Homans and A. H. Nichols, in the presence of Drs. G. H. Lyman, J. N. Borland, W. E. Boardman, and G. H. Bixby. Ether was administered by Mr. Fletcher Abbott.

Incision in linea alba three inches long. Cyst evacuated with Wells's trocar and rubber tube. Diagnosis verified; single cyst, no adhesions, no solid part. Right ovary and uterus healthy. Pedicle, rather short and broad, was secured by the Wells clamp and then divided. One end subsequently slipped, and bled to the extent of one ounce, into the peritoneal cavity. It was secured, and the clamp readjusted. Four silk sutures above and one below pedicle. End of pedicle carbonized with solid perchloride of iron. Wound dressed with dry lint. Abdomen supported by cotton-wool, secured by long strips of adhesive plaster. Tumor contained eleven and one half quarts of a thin fluid, and weighed twenty-five pounds.

*After-Treatment.* — No vomiting from ether. As there was no shock, or loss of blood during the operation, as there was no danger of subsequent hæmorrhage, suppuration, and consequently of pyæmia, septicæmia, or other complication which would make a demand upon her strength, the usual stimulating treatment was not carried out. The predominant indication was to avert the peritoneal inflammation by diminishing the intensity of the reaction, and by the prevention of vomiting. In the impossibility of securing a specially trained nurse in this country, I passed every night for a week in the house, and never left my patient by day for more than two hours at a time. Till the fifth day her only diet was ice and soda-water; a little beef-tea given on the second day was vomited at once, and my wavering resolution to persist in the light diet was strengthened. She had brandy (one drachm) on two occasions, to relieve epigastric distress. A troublesome cough was allayed by a chloroform mixture. The temperature fluctuated between 99° and 100.4°, and returned to the normal on the twelfth day. The pulse was never over 120. The last stitch was removed on the sixth day. The wound gaped superficially on either side of the pedicle. The clamp produced quite a deep slough in both flaps by pressure, and was removed on the eleventh day by division of the sloughing remnants of the pedicle. Distressing flatulence was relieved by enemata. The bladder was emptied every few hours with the catheter for several days. Six grains of quinine were given daily after the first week. The patient moved



to the lounge on the sixteenth day. The wound was still suppurating and rather deep, but contracting rapidly.

The patient returned to her home in Maine two months after the operation. She had then nearly regained her usual health and strength. The incision had completely healed. She was rather constipated, and occasionally suffered from abdominal pains. These latter were unquestionably due to traction upon the pedicle. On vaginal examination the uterus, which at the operation had been brought with its left side apposed to the abdominal incision, had resumed the erect position, though its fundus was still firmly united to the upper end of the incision. On passing the uterine sound, the internal os and whole uterine cavity were found to be exquisitely tender. Laxatives, warm hip baths, and time were prescribed to relieve these conditions.

Spencer Wells has shown conclusively that attention to all the minutiae above recorded, and incessant personal supervision of the after-treatment, have a very decided influence upon the result.

II. In April, 1874, Mrs. X., thirty-two years old, came under my treatment for an abdominal enlargement of four years' duration. I made a doubtful diagnosis of an ovarian cyst, but advised against an operation for its removal, in deference to the humane dictum of Spencer Wells, that we have no right to subject a patient to the risk of such a measure until either her sufferings are so great as to render life no longer desired, or the rapid failure of health and strength makes it evident that longer delay will render speedy death inevitable, even without an operation. It is also undoubtedly true, as maintained by the same writer, that the chances of a successful operation are greater after the tumor has reached such a size as to press forcibly on the surrounding parts, whereby with every movement the peritoneum is exposed to a friction that gradually modifies its texture, rendering it callous and less prone to take on inflammatory action.

I saw my patient from time to time during the year succeeding the first interview, and by treating various symptoms as they appeared was able to give her comparative comfort during that period.

Toward the end of February, 1875, Mrs. X. told me her pain was so constant and harassing that she must have relief at any cost. She was at times much more distended than at others, and was often kept awake all night by distressing dyspnoea. Her abdomen now measured forty-six inches at the umbilicus. The symptoms were evidently due in great measure to ascitic fluid, which, together with very fat abdominal walls, masked the nature of the tumor. Still more doubt was thrown on the diagnosis by the history of an attack of jaundice and "liver complaint" just prior to the discovery of the tumor, and by the presence of menorrhagia for several years. Examination showed pretty conclusively that the liver was not the seat of the growth, and a fibroid of the uterus was

at length excluded by means of a procedure which I have reason to think is new. The uterus was found to be retroverted, the cervix movable, but the fundus held firmly. The tumor could not be reached per vaginam, and no direct impulse or wave of fluctuation could be transmitted from the epigastric region to the uterus owing to the amount of ascitic fluid intervening between the abdominal walls and the uppermost part of the tumor. The uterine sound was of no avail. In this dilemma I placed the patient in the knee-elbow posture, with the idea that if the tumor were a fibroid its weight would cause it to sink in the ascitic fluid until it rested on the abdominal walls; in this position I should be able to obtain by palpation some information as to the character of its surface, could at the same time send a direct forcible impulse to the uterus, but, more especially, could derive some indications from the change in the shape of the vagina and its relations to the cervix uteri. I argued that if the tumor were a fibroid, continuous with or closely attached to the uterus, its weight, dragging upon the vagina by means of the cervix, would cause the vagina to be drawn out into a long funnel, at the end of which would be the cervix, not projecting as before, but so retracted as to be almost level with the surface of the vagina. A thin-walled ovarian cyst, on the other hand, would be scarcely heavier than the ascitic fluid; it would consequently not change its position materially on change of the patient's posture, its slight amount of traction would not bear upon the uterus alone, but would be distributed throughout the broad ligament, from which its pedicle would chiefly spring; as a consequence of these conditions, the vagina would be less distorted and the prominence of the cervix be less modified; in addition, the impulse from above would not be forcibly transmitted to the uterus, and the surface of the tumor would not become accessible to palpation. Two contingencies might nullify the inferences to be drawn from these indications: the presence of pelvic adhesions, and a partially solid character of an ovarian tumor. But adhesions are known to be rare with fibroid tumors, and, as far as my experience goes, the more solid portion of multilocular ovarian cysts is generally situated in the pelvis and easily accessible. This method is of course only applicable to small and medium-sized tumors surrounded by considerable ascitic fluid. Governed by the above considerations I diagnosed an ovarian cyst, probably unilocular, free from adhesions, and with no solid part, but surrounded by a varying amount of ascitic fluid.

The tumor was removed on March 6, 1875, with the assistance of Drs. G. H. Lyman and J. N. Borland, in presence of Drs. C. E. Buckingham and J. P. Reynolds. Ether was administered by Mr. Fletcher Abbott. The same extreme care to avert the possibility of infection and to secure every hygienic advantage was observed in the preparation for the operation as was detailed in the report of my last case.



The correctness of the diagnosis was verified; there was less ascitic fluid than was expected, but I had been seeking to promote its absorption for several days by the administration of a saturated solution of chlorate of potash. The abdominal walls were fully three inches thick; an incision four inches long was made in the median line; the pedicle was very short, but a Wells clamp was applied without difficulty, and the incision was closed with silk sutures. It was found impossible to cleanse the peritoneal cavity completely, for a pinkish serum was seen to ooze from every part of the peritoneum as fast as it was wiped away. Two gallons of fluid were in the cyst. The total weight of the tumor was eighteen pounds.

The recovery from ether was speedy and unattended by vomiting. Morphine to the extent of a grain was required to relieve the pain apparently due to the traction on the pedicle. Three hours after the operation the patient was dozing, so that I ventured to leave her in charge of the nurse for half an hour. On my return, however, I found her in a state of profound collapse, almost pulseless, scarcely breathing, blue, and clammy. Brandy and heat had already proved ineffectual to arouse the vital forces. I immediately removed the dressings from the wound and, finding the abdomen considerably distended, took out nearly all the sutures, broke up the agglutinations, and allowed much serum to escape; on search no effusion of blood was discovered in the peritoneal cavity. The patient revived at once. The pedicle seemed so tense that, before reclosing the incision, I tied it firmly below the clamp, removed this, and dropped the pedicle in Douglas's pouch. A similar sudden revival from imminent death was observed in 1867 by Koeberlé, who, during an acute peritonitis subsequent to ovariectomy, made an incision into the right flank, where dullness was detected, and allowed a large accumulation of pinkish serum to escape. The patient rallied at once and made a good recovery.

During the three following days the patient's condition, if not altogether satisfactory, was certainly not alarming. She was kept on a light diet for thirty-six hours, and then stimulated moderately. On the second day there was considerable vomiting, with slight tenderness and distention of the abdomen; she was very fretful and intolerant of restraint, kept her legs in constant motion and frequently shifted her body about on the bed. The pulse ranged from 110 to 130, and the temperature from 99° to 102° F. In the afternoon of the fourth day the pulse fell to 110 and the temperature to 100.5°; enemata had at length brought flatus from the rectum, the tongue had become moist, and the wound began to suppurate in a healthy way. Toward night, however, without any increase in the abdominal tenderness or other indication of peritonitis, the symptoms became ominous. On the next morning, the abdominal distention was so great as seriously to impede respiration; no

wind escaped either by mouth or by rectum. I summoned Dr. J. J. Putnam to try the efficacy of galvanism in exciting peristaltic action, but his efforts were unavailing, and I was obliged to puncture the intestines, through the abdominal walls, with a fine trocar. Much gas escaped through the canula, with immense relief to the respiration. The patient continued to sink, however, in spite of constant stimulation by means of brandy and beef-tea enemata, brandy and a solution of quinine subcutaneously, and she died on the fifth day.

A complete autopsy was not made, but Dr. E. G. Cutler examined the peritoneal cavity in my presence. We found evidences of recent peritonitis, limited, however, to the neighborhood of the abdominal incision; the peritoneum above the umbilicus was perfectly healthy in appearance, as was that lining the pelvis and the pelvic organs; it was evident that no inflammation had spread from the cut end of the pedicle. The uterus and appendages were removed. The kidneys, liver, and spleen were healthy.

In view of the mildness of the symptoms after the operation, and the limited extent of the peritonitic inflammation found at the autopsy, I was at a loss to explain the cause of death in one so well-nourished and of so good constitution as my patient appeared to be. A week after the patient's death, however, it was reported to me on unquestionable authority, that for three years she had been in the habit of a free indulgence in spirituous liquors, frequently imbibing from one to three pints of rum in a day, though never intoxicated. This practice had not only been kept from my knowledge, but was absolutely denied on the day preceding the operation. Some nervous symptoms had aroused my suspicions, and led to my putting some categorical questions as to the amount of stimulants consumed daily; I explained the importance of my knowing the truth, as the after-treatment always had to be adapted to the habits of each individual. She disclaimed emphatically ever drinking anything but a pint of beer a day; my suspicions were consequently set at rest. Had I known the facts of the case I should have declined to operate. As it was, there was no apparent reason before the operation why the result should not have been as favorable as in my last case.

I have now no hesitation in ascribing the fatal result to exhaustion immediately dependent upon the physical condition engendered by the immoderate use of alcoholic stimulants. All surgeons know how full of risk even trivial operations are apt to be in individuals who are saturated with alcohol.

In connection with the puncturing of the intestines with the aspirator to relieve the flatulence, it seems to me that another indication may be met by injecting brandy, beef-tea, etc., through the canula into the small or large intestine, after the gas has escaped. By this means a patient's strength might be sustained when nothing could be retained



in the stomach, and absorption by the rectum was too slow to meet the demands of the system. In this way fluids could be introduced in considerable quantities into that part of the alimentary canal from which they would be most readily absorbed. If the use of the trocar is as harmless as is asserted by those who have tried it, I see no reason why the intestines should not be repeatedly tapped for the injection of nutrient and stimulant fluids in many desperate conditions and diseases, when the other resources of medical art have failed. In such a case as mine I believe that there would have been no other means of introducing enough alcohol to carry her through the depressing effect of such an operation, had her habits been made known to me during life. Might not peristaltic action also have been excited by the same measure, and thus a second advantage been derived from this procedure? In case of faecal impaction, may not the hard, scybalous masses be softened and broken up by the injection of different fluids into their midst, when enemata and purges have proved powerless?

*Report upon the Specimens by Dr. Fitz.*—“The tumor consisted of a single sack intimately connected with an elongated, dense, flattened mass, shaped like the normal ovary but certainly six times as large. This body was composed of a fibrous stroma in which were several small cysts, whose general appearance was that of Graafian vesicles (follicular cysts). The large cyst was contained within a thin capsule of firm fibrous tissue (peritoneum), to which it was loosely connected by areolar tissue. In this intervening layer a cyst of the size of a bean was found, which was lined with ciliated epithelium, the ciliary movement still going on. Between the outer investment and the wall of the cyst, the Fallopian tube was discovered; it was nearly a foot in length, was of normal size where it had been cut in the pedicle, but farther on was dilated; it completely encircled the tumor and terminated blindly near the ovary, being lost in the sheath of the cyst. Fimbriae were not observed. The proper wall of the cyst was smooth, thick, of grayish color, thrown into numerous folds, moderately vascular, and lined with a cylindrical non-ciliated epithelium. The fluid from the cyst contained albumen. There was no evidence of secondary cysts. The structure of the tumor, and its relation to the ovary, the Fallopian tube, and the investing membrane (containing a cyst lined with ciliated epithelium), from which latter it could be readily enucleated, render it probable that the tumor was an ovarian cyst which had grown between the layers of the broad ligament.

“The left ovary was of normal size, and contained several small follicular cysts. A unilocular cyst as large as a walnut (which at the operation was taken for dropsy of the tube) extended outwards from the left end of the ovary, between the layers of the broad ligament. It contained a yellow, gelatinous fluid, in which were numerous granular corpuscles.

The wall of the cyst was composed of fibrous tissue in which were numerous concretions, often microscopic. One as large as a grape-seed projected from that part of the wall which was directly connected with the ovary. The wall was lined with tessellated epithelium. The albuminous tunic of the ovary was lost in the wall of the cyst."

In spite of the fact that the histological elements above described would be sufficient, according to pathologists, to include these two cysts among the ovarian, yet I cannot but feel that the extreme improbability of two ovarian cysts in the same patient, developing between the layers of the broad ligament and not in the common direction toward the periphery of the organ, casts some doubt upon the correctness of the commonly accepted diagnostic points of ovarian and parovarian cysts. Dr. Bantock<sup>1</sup> has already ventured to call such as these parovarian cysts. There are certainly several facts which are hardly compatible with the theory of their ovarian origin: First, as pointed out by Dr. Bantock, the absence of Graafian follicles in the deeper part of the ovaries, and the unlikelihood of their developing in the direction of the greatest resistance; secondly, the curious fact that very few of the tumors, lying thus between the folds of the broad ligament, assume the common form of multilocular cysts, but they are almost invariably unilocular; thirdly, if they originate in the ovary they should be covered with a double layer of peritoneum, for Waldeyer has demonstrated that the ovary lies in a cup-shaped depression of this membrane, and an ovarian cyst must push the peritoneum forming this depression before it as it insinuates itself between the layers of the broad ligament and becomes invested by them. This double layer has not been noticed by others, and was certainly absent in my specimens. This subject needs thorough investigation.

<sup>1</sup> Obstetrical Journal of Great Britain, i. 2, 1873.



Boston M. & S. J.

1875, XCII, 397-399;

" XCIII, 101-106.